

NOISE REJECTION-ISOLATION: With unit under power and an ANSI/IEEE C62.41Cat. A pulse applied either normal or common mode at the input, the noise output voltage will be less than 10v normal mode and less than .5v common mode in all four quadrants (CM-NM, NM-NM, CM-CM, NM-CM).

SURGE VOLTAGE WITHSTAND CAPABILITY: Tested under power to ANSI/IEEE C62.41 Cat. A & B (formerly IEEE587-1980). Cat. A-6000v @ 200 amps, 0.5 usec risetime, 100 kHz decay, Cat. B - 6000v @ 500 amps, 0.5 usec risetime, 100 kHz decay.

WARRANTY / SUPPORT: POWERVAR warrants the electronics and transformers used in its uninterruptible power managers to be free from defects in materials and workmanship for a five year period of five years from date of shipment. Batteries are warranted for a period of two years from the date of shipment. For North American service or support on any POWERVAR product, please contact POWERVAR technical support at (800) 369-7179 (in Illinois call (847) 596-7000). For service and support in EMEA, contact POWERVAR, Ltd. in the United Kingdom at + 44 (0) 1793 553980. Or visit the POWERVAR website at www.powervar.com.

BATTERY LIFE DISCLAIMER: POWERVAR's standard battery warranty applies only to UPS and UPM products which are continuously connected to AC mains power, except during utility power outages. Products which are regularly and intentionally disconnected from AC mains power will experience battery discharge/charge cycle potentially far more numerous than those for which the battery was designed. As a result, products used in such applications will experience substantially reduced battery life. For that reason, POWERVAR's standard battery warranty does not apply for applications in which the UPS or UPM product is regularly and intentionally disconnected from AC mains power. POWERVAR UPS and UPM products used in such applications shall receive a 90 day warranty on batteries.

Extend NEW PLANMECA X-Ray System Warranty to 3 Years

Purchase and properly install the appropriate PLANMECA Power Conditioner with your newly purchased PLANMECA X-Ray Imaging System and PLANMECA will give an additional year on the product warranty.



PLANMECA®
Power Conditioners

What do you need to know about Power Problems?

Power problems can enter your computer in two different ways.

- **Normal Mode**

One way is in Normal Mode (NM), which happens through power disturbances that enter your computer system using a path provided by the phase and neutral conductors. NM disturbances are mostly associated with lightning, utility grid switching, facility load spiking, and similar events. These events are associated with power supply issues or hardware failures.

- **Common Mode**

The second way power problems can occur is in what is called the Common Mode (CM). This is where power disturbances enter the computer between either the current carrying conductor (phase or neutral) and the safety ground conductor. Much emphasis is placed on limiting CM disturbances between neutral and ground. This is because CM voltages can easily disrupt computer operations. Hardware damage is possible with CM events, but unreliable operation, lock-ups, and "soft" failures occur more frequently.

The only way to limit power disturbances to the levels recommended by the semiconductor industry is through the use of a power conditioner that incorporates a low impedance isolation transformer, a power line noise filter, and surge diverter. PLANMECA power conditioners meet these stringent criteria, and are UL listed.

Power problems affect your system in three different ways: Destruction, Degradation, and Disruption.

- **Destruction**

Destruction occurs when a power disturbance is so large that its energy destroys a semiconductor device like a transistor or integrated circuit. These destructive disturbances can enter a computer system through NM or CM even though it is more likely for there to be a NM disturbance. These destructive disturbances leave visible evidence in the form of smoke, soot and charred componentry.

- **Degradation**

Degradation occurs with lower amplitude power disturbances that enter an electronic system and affect components at a microscopic level. Since degrading power disturbances exceed the voltage tolerances of componentry material, erosion of the semiconductor material occurs. Consequently the damage leaves less semiconductor material to handle the needs of the

circuit, resulting in higher operating temperatures. This sort of damage is cumulative and eventually will cause enough damage that the semiconductor junction experiences "thermal runaway" and fails. Without visible indications it can be almost impossible to identify failure caused by Degradation.

- **Disruption**

Disruption occurs from power disturbances that are of such a frequency and amplitude that they can mimic actual logic signals which can cause a computer to make incorrect decisions. Disruption occurs when CM voltages become too excessive, or a system disruption due to the presence of ground loops in a networked environment. Ground loops are a major cause of data communications errors and slow the systems throughput. These disruptive events are often mistaken for software "bugs" or operator errors. Disruptive events are the most common cause of "No Problem Found" service calls.

Front Panel Controls

- Power On/Off
- Test
- Load Level LED Gauge
- Battery Charge LED Gauge
- Output Receptacle Status
- Voltage Manager Boost
- Voltage Manager Nominal LED
- Voltage Manager Buck LED
- On Battery LED
- Replace Battery LED
- Overload LED

Rear Panel Information and Controls

- 6 foot power cord with NEMA 5 - 15P plug
- Six (6) NEMA 5 - 15R receptacles controllable via Com Mgr Software in two groups
- Configuration Manager DIP switches
- Communications Manager DB9 port, USB Port
- Circuit Breaker
- AC inlet Module
- Site Wiring Fault LED
- Battery DC Jumper (also enables cold start on battery)

Internal Batteries

- User hot-swappable (see instruction manual)
- Type - 12 volt, High Rate 51W; 54W
- Quantity - 2 batteries; 4 batteries
- Recharge time - 8 hours to 80%, 24 hours to full charge

Environmental

- Temperature - 0 + 40° C (32 - 104° F) Operating -20 - +60° C (-40 - +140° F) Shipment Storage
- Humidity - 5 - 90% non-condensing (Operating, Shipment, Storage)
- Altitude - 3000m (10,000 ft.) max. (Operating, Shipment, Storage)

Additional Model Specific Information

Safety Agency and EMC Compliance: All units are listed by UL, and marked with the UL/cUL marking.

Standard UPM:

Products listed to:

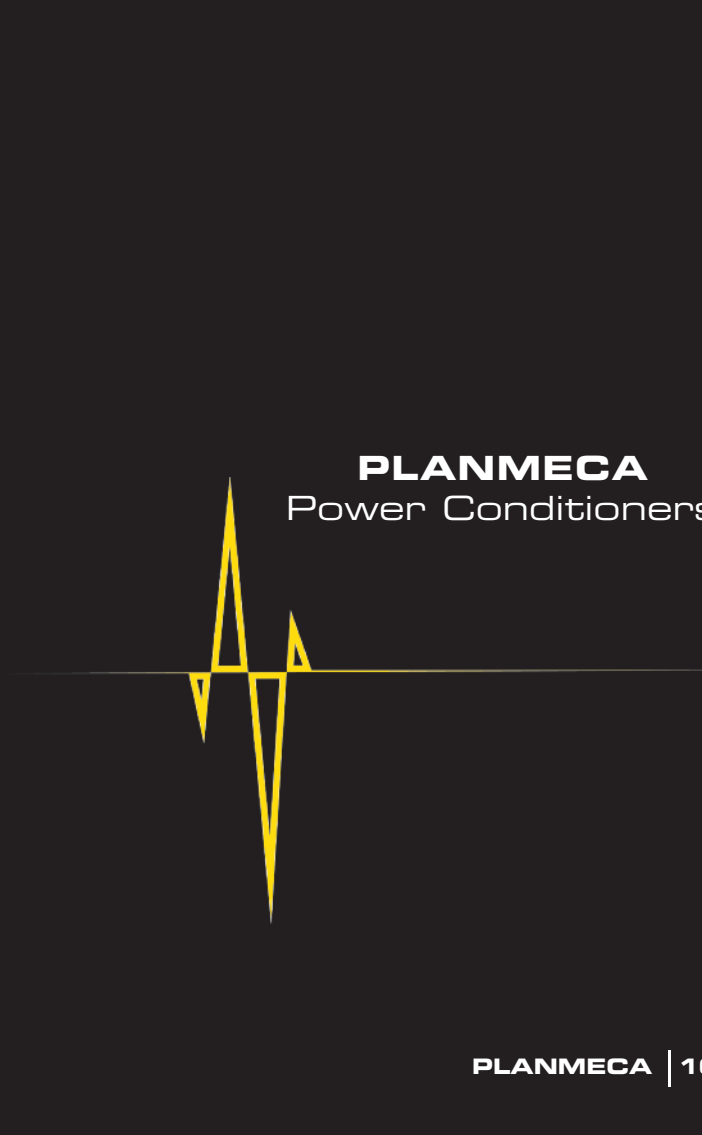
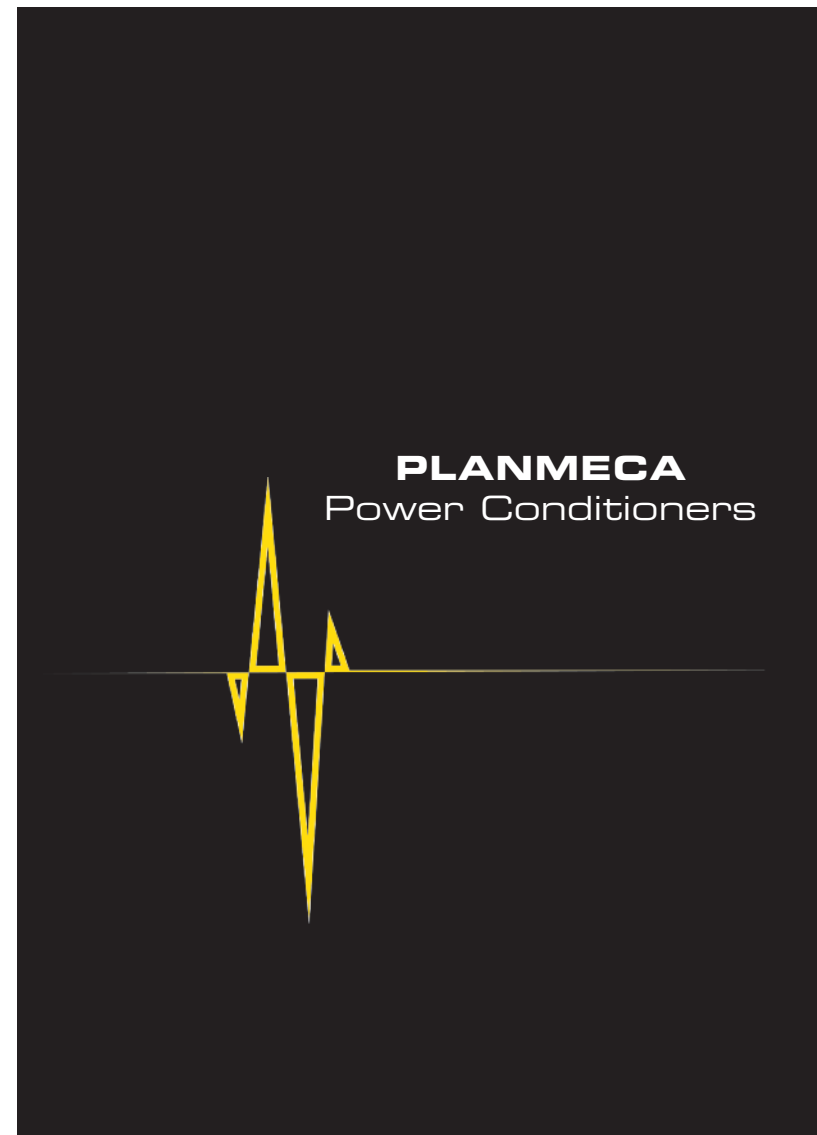
- UL1778 2nd edition
- CSA 22.2 Nos. 107-1

Products in compliance with:

- FCC-Part 15, Subpart B, Sections 15.107b & 15.109b. Class A Digital Device*
- CISPR22:2003-3 4th edition, Class A*
- IEC61000-4-2, Electrostatic Discharge
- IEC61000-4-3, Radiated Electromagnetic Field Immunity
- IEC61000-4-4, Electrical Fast Transient/Burst Immunity
- IEC61000-4-5, Surge Immunity
- IEC61000-4-6, Immunity to Conducted Radio Frequency Disturbances
- IEC61000-4-8, Power Frequency Magnetic Field Immunity
- IEC61000-4-11, Voltage Dips, Short Interruptions, and Voltage Variations

RoHS Compliance:

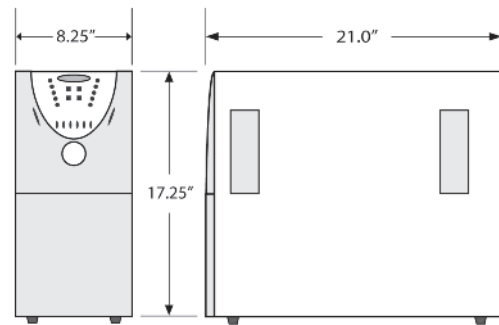
All products, Standard and Medical are RoHS compliant



North American Uninterruptible Power Manager "E" Case Enclosure with Battery Back-up

PM54222
Recommended for
Proline X-Rays

PM54320
Recommended for
ProMax 3D,
ProMax X-Rays



PLANMECA's Solution for Power Quality

The PLANMECA equipment you have purchased contains circuit boards and sensitive electronic components. For this equipment and all other sensitive electronic equipment to operate properly; clean power, without surges, spikes, or ground noise is essential.

PLANMECA Inc. recommends that our equipment be attached to a power conditioner. The power conditioners that we offer address all of the following: Destruction, Degradation, and Disruption. PLANMECA offers this solution in hopes that you will never see loss of critical data or premature failure of equipment due to the effects of power disturbances.

Extend NEW PLANMECA X-Ray System Warranty to 3 Years
Purchase and properly install the appropriate PLANMECA Power Conditioner with your newly purchased PLANMECA X-Ray Imaging System and PLANMECA will give an additional year on the product warranty.



	PLANMECA # PM54222	PLANMECA # PM54320
Type	Standard	Standard
Power Rating VA/Watts	1800 / 1400	1800 / 1400
Inverter Waveform	Low distortion sine wave	Low distortion sine wave
Transfer time	4 ms. typical	4 ms. typical
Frequency	50 - 60 Hz.	50 - 60 Hz.
BTU / Hr.	652	652
T.H.D. Max. w / 100% resistive load	<3% on battery	<3% on battery
On line Efficiency w/o Charger	>88%	>88%
Input Voltage	120	120
Input Current	16 amps max	16 amps max
Output Voltage	120	120
Output Current VA / Watts	11.7 / 15.0 amps	11.7 / 15.0 amps
Input Voltage Range w/o using Battery	90 - 144 volts	90 - 144 volts
Output regulation (mains)	± 10%	± 10%
Output regulation (battery)	±3 %	±3 %
Backup time (full load)	8 to 10 minutes	8 to 10 minutes
Communications Interface	DB9, USB	DB9, USB
Shipping Weight (lbs.)	160	165

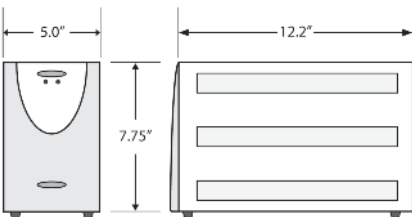
POWER CONDITIONER	ITEM NUMBER
Power Conditioner for ProMax 3D, ProMax, and Proline X-rays	PM61144
Optional wall mounting bracket for PM61144	PM11519
Power Conditioner for ProOne Panoramic	PM61084
Optional wall mounting bracket for PM61804	PM10919
Power Conditioner for PLANMECA Intraoral X-rays	PM61036
Optional wall mounting bracket for PM61036	PM10519

POWER CONDITIONER WITH BATTERY BACKUP	ITEM NUMBER
Power Conditioner with battery backup for ProMax 3D, ProMax	PM54320
Power Conditioner with battery backup for PLANMECA Intraoral X-rays, and ProOne	PM54144
Power Conditioner with battery backup for Proline X-rays	PM54222
Power Conditioner with battery backup for Network Interface Box (NIB),	PM54024
Power Conditioner with battery backup for HP Computer	PM54080

OPTICAL ISOLATOR FOR RJ45 CONNECTIONS	ITEM NUMBER
Optical isolator for RJ45 connections for ProMax, ProOne, and LAN connection (Quantity ordered dependent on configuration)	PM23030

North American Uninterruptible Power Manager "A" Case Enclosure with Battery Back-up

PM54024
Recommended for NIB
(network interface box)



Front Panel Controls

- Power On/Off
- Test
- On Line
- On Battery LED

Rear Panel Information and Controls

- 6 foot power cord with NEMA 5 - 15P plug
- Two (2) NEMA 5 -15R receptacles
- Communications Manager DB9 port, USB Port
- Circuit Breaker
- AC inlet Module
- Site Wiring Fault LED
- Battery Enable Plug

Internal Batteries

- User hot-swappable (see instruction manual)
- Type - 12 volt, High Rate 21W
- Quantity - 2 batteries
- Recharge time - 8 hours to 80%, 24 hours to full charge

Environmental

- Temperature - 0 + 40°C (32 - 104°F) Operating -20 - +60°C (-40 - +140°F) Shipment Storage
- Humidity - 5 - 90% non-condensing (Operating, Shipment, Storage)
- Altitude - 3000m (10,000 ft.) max. (Operating, Shipment, Storage)

Additional Model Specific Information

Safety Agency and EMC Compliance: All units are listed by UL, and marked with the UL/cUL marking.

Standard UPM:

- Products listed to:
- UL1778 2nd edition
- CSA 22.2 Nos. 107-1

Products in compliance with:

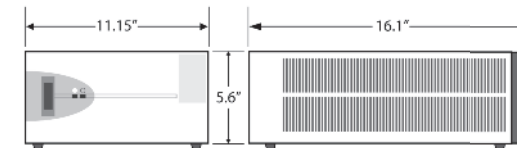
- FCC-Part 15, Subpart B, Sections 15.107b & 15.109b. Class A Digital Device*
- CISPR22:2003-3 4th edition, Class A*
- IEC61000-4-2, Electrostatic Discharge
- IEC61000-4-3, Radiated Electromagnetic Field Immunity
- IEC61000-4-4, Electrical Fast Transient/Burst Immunity
- IEC61000-4-5, Surge Immunity
- IEC61000-4-6, Immunity to Conducted Radio Frequency Disturbances
- IEC61000-4-8, Power Frequency Magnetic Field Immunity
- IEC61000-4-11, Voltage Dips, Short Interruptions, and Voltage Variations

RoHS Compliance:

All products, Standard and Medical are RoHS compliant

North American Standard Conditioner "D" Case Enclosure

PM61144
Recommended for
ProMax® 3D,
ProMax® and
Proline X-Rays



	PLANMECA # PM61144
VA Rating	1440
Frequency	60 Hz.
BTU / Hr. Output	246
T.H.D. % Added	<1%
Load Surge Current @	
1/2 cycle	400 amps
1 second	192 amps
10 seconds	55 amps
Input Voltage	120
Output Voltage	120
Output Current	12.0 amps
Efficiency	95 %
Voltage Drop NO load to FULL load	4 %
Wall Mountable	YES
Compliance	UL, cUL, RoHS
Shipping Weight (lbs.)	43

PLANMECA
Power Conditioners

	PLANMECA # PM54024
Type	Standard
Power Rating VA/Watts	240/168
Inverter Waveform	Low distortion sine wave
Transfer time	4 ms. typical
Frequency	60 Hz.
BTU / Hr.	57
T.H.D. Max. w / 100% resistive load	<3% on battery
On line Efficiency w/o Charger	90%
Input Voltage	120
Input Current	2.5 amps
Output Voltage	120
Output Current VA / Watts	2.0 / 1.4 amps
Input Voltage Range w/o using Battery	96 - 151 volts
Output regulation (mains)	± 10%
Output regulation (battery)	±5 %
Backup time (full load)	8 to 10 minutes
Wall Mountable	NO
Communications Interface	DB9, USB
Shipping Weight (lbs.)	27

North American Uninterruptible Power Manager "D" Case Enclosure with Battery Back-up

PM54144

Recommended for
ProOne Panoramic,
PLANMECA Intraoral X-Rays



Front Panel Controls

- Power On/Off
- Test
- Load Level LED Gauge
- Battery Charge LED Gauge
- Output Receptacle Status
- Voltage Manager Boost
- Voltage Manager Nominal LED
- Voltage Manager Buck LED
- On Battery LED
- Replace Battery LED
- Overload LED

Rear Panel Information and Controls

- 6 foot power cord with NEMA 5 - 15P plug
- Six (6) NEMA 5 - 15R receptacles controllable via Com Mgr Software in two groups
- Configuration Manager DIP switches
- Communications Manager DB9 port, USB Port
- Circuit Breaker
- AC inlet Module
- Site Wiring Fault LED
- Battery DC Jumper (also enables cold start on battery)

Internal Batteries

- User hot-swappable (see instruction manual)
- Type - 12 volt, High Rate 51W; 54W
- Quantity - 2 batteries; 4 batteries
- Recharge time - 8 hours to 80%, 24 hours to full charge

Environmental

- Temperature - 0 + 40° C (32 - 104° F) Operating -20 - +60° C (-40 - +140° F) Shipment Storage
- Humidity - 5 - 90% non-condensing (Operating, Shipment, Storage)
- Altitude - 3000m (10,000 ft.) max. (Operating, Shipment, Storage)

Additional Model Specific Information

Safety Agency and EMC Compliance: All units are listed by UL, and marked with the UL/cUL marking.

Standard UPM:

Products listed to:

- UL1778 2nd edition
- CSA 22.2 Nos. 107-1

Products in compliance with:

- FCC-Part 15, Subpart B, Sections 15.107b & 15.109b. Class A Digital Device*
- CISPR22:2003-3 4th edition, Class A*
- IEC61000-4-2, Electrostatic Discharge
- IEC61000-4-3, Radiated Electromagnetic Field Immunity
- IEC61000-4-4, Electrical Fast Transient/Burst Immunity
- IEC61000-4-5, Surge Immunity
- IEC61000-4-6, Immunity to Conducted Radio Frequency Disturbances
- IEC61000-4-8, Power Frequency Magnetic Field Immunity
- IEC61000-4-11, Voltage Dips, Short Interruptions, and Voltage Variations

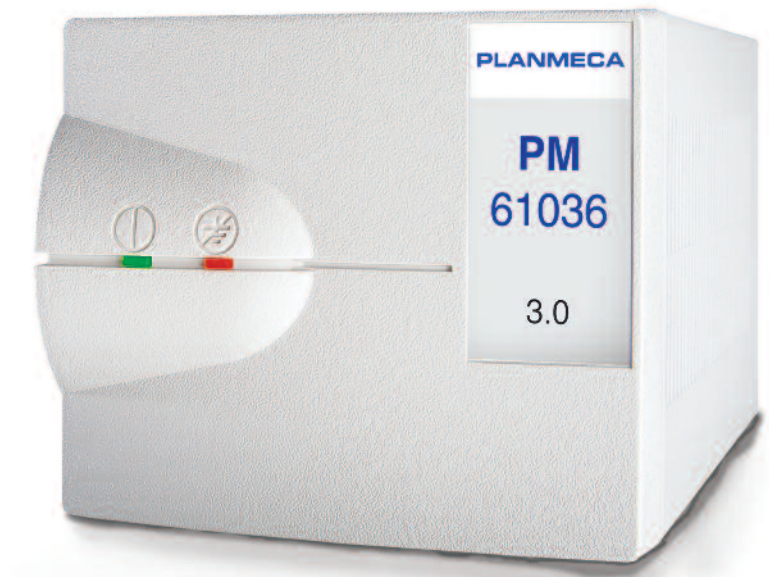
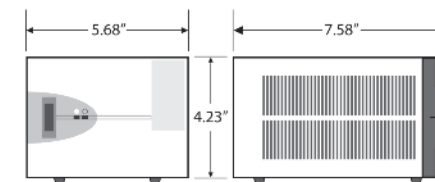
RoHS Compliance:

All products, Standard and Medical are RoHS compliant

North American Standard Conditioner "B" Case Enclosure

PM61036

Recommended for
PLANMECA Intraoral X-rays



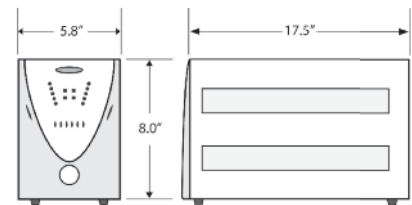
	PLANMECA # PM61036
VA Rating	360
Frequency	60 Hz.
BTU / Hr. Output	123
T.H.D. % Added	<1%
Load Surge Current @	
1/2 cycle	82 amps
1 second	28 amps
10 seconds	10 amps
Input Voltage	120
Output Voltage	120
Output Current	3.0 amps
Efficiency	90 %
Voltage Drop NO load too FULL load	6 %
Wall Mountable	YES
Compliance	UL, cUL, RoHS
Shipping Weight (lbs.)	11

PLANMECA
Power Conditioners

	PLANMECA # PM54144
Type	Standard
Power Rating VA/Watts	1440 / 1008
Inverter Waveform	Low distortion sine wave
Transfer time	4 ms. typical
Frequency	60 Hz.
BTU / Hr.	220
T.H.D. Max. w / 100% resistive load	<3% on battery
On line Efficiency w/o Charger	94%
Input Voltage	120
Input Current	12.0 amps
Output Voltage	120
Output Current VA / Watts	12.0 / 8.4 amps
Input Voltage Range w/o using Battery	96 - 151 volts
Output regulation (mains)	± 10%
Output regulation (battery)	±5 %
Backup time (full load)	4 to 6 minutes
Wall Mountable	NO
Communications Interface	DB9, USB
Shipping Weight (lbs.)	79

North American Uninterruptible Power Manager "C" Case Enclosure with Battery Back-up

PM54080
Recommended for
HP Computer



Front Panel Controls

- Power On/Off
- Test
- Load Level LED Gauge
- Battery Charge LED Gauge
- Output Receptacle Status
- Voltage Manager Boost
- Voltage Manager Nominal LED
- Voltage Manager Buck LED
- On Battery LED
- Replace Battery LED
- Overload LED

Rear Panel Information and Controls

- 6 foot power cord with NEMA 5 - 15P plug
- Six (6) NEMA 5 - 15R receptacles controllable via Com Mgr Software in two groups
- Communications Manager DB9 port, USB Port
- Circuit Breaker
- AC inlet Module
- Site Wiring Fault LED
- Battery DC Jumper (also enables cold start on battery)

Internal Batteries

- User hot-swappable (see instruction manual)
- Type - 12 volt, High Rate 21W
- Quantity - 2 batteries
- Recharge time - 8 hours to 80%, 24 hours to full charge

Environmental

- Temperature - 0 + 40°C (32 - 104°F) Operating -20 - +60°C (-40 - +140°F) Shipment Storage
- Humidity - 5 - 90% non-condensing (Operating, Shipment, Storage)
- Altitude - 3000m (10,000 ft.) max. (Operating, Shipment, Storage)

Additional Model Specific Information

Safety Agency and EMC Compliance: All units are listed by UL, and marked with the UL/cUL marking.

Standard UPM:

Products listed to:

- UL1778 2nd edition
- CSA 22.2 Nos. 107-1

Products in compliance with:

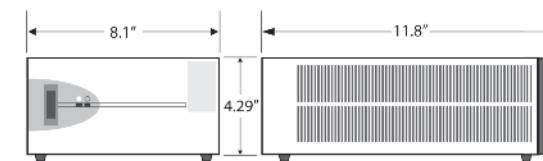
- FCC-Part 15, Subpart B, Sections 15.107b & 15.109b. Class A Digital Device*
- CISPR22:2003-3 4th edition, Class A*
- IEC61000-4-2, Electrostatic Discharge
- IEC61000-4-3, Radiated Electromagnetic Field Immunity
- IEC61000-4-4, Electrical Fast Transient/Burst Immunity
- IEC61000-4-5, Surge Immunity
- IEC61000-4-6, Immunity to Conducted Radio Frequency Disturbances
- IEC61000-4-8, Power Frequency Magnetic Field Immunity
- IEC61000-4-11, Voltage Dips, Short Interruptions, and Voltage Variations

RoHS Compliance:

All products, Standard and Medical are RoHS compliant

North American Standard Conditioner "C" Case Enclosure

PM61084
Recommended for
ProOne™ Panoramic



	PLANMECA # PM54080
Type	Standard
Power Rating VA/Watts	800 / 560
Inverter Waveform	Low distortion sine wave
Transfer time	4 ms. typical
Frequency	60 Hz.
BTU / Hr.	166
T.H.D. Max. w / 100% resistive load	<3% on battery
On line Efficiency w/o Charger	90%
Input Voltage	120
Input Current	7.9 amps
Output Voltage	120
Output Current VA / Watts	6.7 / 4.7 amps
Input Voltage Range w/o using Battery	96 - 151 volts
Output regulation (mains)	± 10%
Output regulation (battery)	±5 %
Backup time (full load)	4 to 6 minutes
Wall Mountable	YES
Communications Interface	DB9, USB
Shipping Weight (lbs.)	47

	PLANMECA # PM61084
VA Rating	840
Frequency	60 Hz.
BTU / Hr. Output	143
T.H.D. % Added	<1%
Load Surge Current @	
1/2 cycle	237 amps
1 second	114 amps
10 seconds	33 amps
Input Voltage	120
Output Voltage	120
Output Current	7.0 amps
Efficiency	95 %
Voltage Drop NO load too FULL load	5 %
Wall Mountable	YES
Compliance	UL, cUL, RoHS
Shipping Weight (lbs.)	22

PLANMECA
Power Conditioners